
From: Adrian Melendez [adrian@petroindustrial.us]
Sent: 4/15/2021 1:30:37 PM
To: Merlin Figueira [mef@vtti.com]; 'Matthias A. Clarke' [Matthias.Clarke@viwapa.vi]
CC: Hanief Aziz [Hanief.Aziz@viwapa.vi]; Larry J. Mondy [Larry.Mondy@viwapa.vi]; Sebastian Moretti [srm@Vitol.com]; Charlotte Pratt Horowitz [cap@Vitol.com]; Andrew Canning [Andrew.Canning@optis.co.uk]; Chad Persaud [chad@petroindustrial.us]
Subject: 3" SS Vent line project
Attachments: WPS-Comb-SMAW-GTAW.pdf; WPS-GTAW (Tig).pdf; WPS-SMAW (Stick).pdf; WPS-SMAW (Structural).pdf; WPQ-All Petro Welders-WAPA-IPOS.pdf

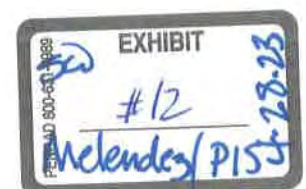
External Email: Do not open links/attachments from untrusted senders (Sender appears to be adrian@petroindustrial.us)

Good morning Team,

Please find Petro's welding procedures and welder's quals for your review.


Thank you,

Adrian Melendez
Project Manager
(956) 605-4142



Petro Industrial Solutions, LLC PO Box 26303 Christiansted, VI 00824		Page 1 of 3
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-COMB-P1 (Section IX, ASME Boiler & Pressure Vessel Code)		
Company Name: Petro Industrial Solutions, LLC		By: Procedure Creator
Welding Procedure No. PISL-COMB-P1	Date	Supporting PQR No. PISL-COMB-P1-PQR
Rev. No. 0	Date	
Welding Process (es) SMAW/GTAW	Type (s) Manual	(Automatic, Manual, Machine, or Semi-Auto)
JOINTS		
Joint Design <u>Single V - Groove</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u> (Refer to backing & retainers.)		
<input type="checkbox"/> Metal <input type="checkbox"/> Nonfusing Metal <input type="checkbox"/> Nonmetallic <input type="checkbox"/> Other		
Joint Design <u>Single U - Groove</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u> (Refer to backing & retainers.) (Refer to backing & retainers.)		
Joint Design <u>Branch Connection</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u> (Refer to backing & retainers.) (Refer to backing & retainers.)		
Joint Design <u>Groove Connection</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u> (Refer to backing & retainers.) (Refer to backing & retainers.)		
Joint Design <u>Fillet Weld</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u> (Refer to backing & retainers.) (Refer to backing & retainers.)		
		DETAILS
		ALL JOINTS

Petro Industrial Solutions, LLC PO Box 26303 Christiansburg, VA 00024		Page 2 of 3
WELDING PROCEDURE SPECIFICATIONS (Section IX, ASME Boiler & Pressure Vessel Code)		(WPS) PISL-COMB-P1
JOINTS (CONTD)		
Joint Design	<u>Socket Weld</u>	
Backing (Yes) _____ (NO) _____	<u>X</u>	
Backing Material (Type) _____	<u>N/A</u>	
(Refer to backing & retainers.)		
<input type="checkbox"/> Metal <input type="checkbox"/> Nonmetallic	<input type="checkbox"/> Nonfusing Metal <input type="checkbox"/> Other	
<p style="text-align: center;">RECOMMENDED WELDING DIMENSIONS FOR SOCKET WELDING COMPONENTS OTHER THAN FLANGES</p>		
<p style="text-align: center;">RECOMMENDED WELDING DIMENSIONS FOR FLANGES</p>		
Base Metals P-No. <u>1</u> Group No. <u>1</u> to P-No. <u>1</u> Group No. <u>2</u> OR Specification Type and grade <u>Spec SA 53/105/106/134/135/178/179/181/192/210/211/234/266/333/334/350/372</u> to specification type and grade <u>Spec SA 53/105/106/134/135/178/179/181/192/210/211/234/266/333/334/350/372</u> OR Chem. Analysis and Mech. Prop. <u>N/A</u> to Chem. Analysis and Mech. Prop. <u>N/A</u> Thickness Range: Base Metal: <u>0.0625" to 0.436"</u> Pipe Dia. Range: <u>1" OD to Unlimited</u>		
Filler Metals Spec. No. (SFA) <u>Root & Fill</u> AWS No. (CLASS) <u>A5.18 / A5.1</u> F-No. <u>ER70S-3 / E-7018</u> A-No. <u>F-8 / F-4</u> Size of Filler Metal <u>A-1 / A-1</u> Filler Metal Form <u>3/32", 1/8"</u> Deposited Weld Metal <u>Bare Rod / Electrode (Core Wire)</u> Thickness Range (Groove) <u>0.436" max / 0.436" max</u> Thickness Range (Fillet) <u>0.0625" to 0.436"</u> Electrode-Flux (class) <u>A1</u> Flux Trade Name <u>N/A</u> Consumable Insert <u>N/A</u> Other <u>N/A</u> <p style="text-align: center;">*Or other ER70X or E70XX fillers. Maximum Misalignment= 3/32</p>		

Petro Industrial Solutions, LLC PO Box 26303 Christiansted, VI 00824						Page 3 of 3													
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-COMB-P1																			
(See Section IX, ASME Boiler & Pressure Vessel Code)																			
POSITIONS		ALL		POSTWELD HEAT TREATMENT															
Position (s) of Groove				Temperature Range															
Welding Progression: Up / Down		Up		Time Range															
Position (s) of Fillet		N/A		N/A															
PREHEAT		50°F Min		GAS		Percent Composition													
				Gas (s)		(Mixture)													
Preheat Temp.		50°F Min / 500°F Max		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%;">Standing</td> <td style="width:25%;">Argon</td> <td style="width:25%;">100%</td> <td style="width:25%;">15-40</td> </tr> <tr> <td>Trailing</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Backing</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </table>		Standing	Argon	100%	15-40	Trailing	N/A	N/A	N/A	Backing	N/A	N/A	N/A	Flow Rate	
Standing	Argon	100%	15-40																
Trailing	N/A	N/A	N/A																
Backing	N/A	N/A	N/A																
Interpass Temp.																			
(Continuous or special heating is not required)																			
ELECTRICAL CHARACTERISTICS																			
Current AC or DC		DC		Polarity		Straight (GTAW) / Reverse (SMAW)													
Amps (Range)		See Table		Volts (Range)		See Table													
Tungsten Electrode Size and Type				2% Thoriated 0.062" to 0.093" (or Ceriated) (Pure Tungsten, 2% Thoriated, 2% Ceriated, etc.)															
Mode of Metal Transfer for GMAW				N/A (Spray arc, short circuiting arc, etc.)															
Electrode Wire feed speed range				N/A															
TECHNIQUE																			
String or Weave Bead				Either															
Orifice or Gas Cup Size				1/4" to 1/2"															
Initial and Interpass Cleaning				Mechanical only (joint shall be dry prior to welding)															
Method of back gouging				Mechanical or Thermal (when required by joint configuration)															
Oscillation				N/A															
Contact Tube to Work Distance				N/A															
Multiple or Single Pass (per side)				Both															
Multiple or Single Electrodes				Single															
Travel Speed (RANGE)				See Table															
Peening				Not Allowed															
Other				N/A															
SMAW GENERAL WELDING TECHNIQUE																			
Passes may be made with stringer beads or weave beads as required.																			
Weld Process	Electrode	Weld Layer	Filler Diameter	Current		Volts Range	Travel Speed IPM/RPM	Other (e.g., Remarks, Comments)											
				Type Polar.	AMP Range Low - High														
Stringer Beads	SMAW	Fill	3/32"	Reverse DC (EP)	70-100	20-24	As Required	Holding Oven (50°F to 250°F) for Low Hydrogen Electrodes											
			1/8"		100-175	16-28													
GTAW weld with Filler Metal	GTAW	As required	1/16"	Straight DC (EN)	50-140	10-18	As Required	No Comments											
			3/32"		50-220	10-18													
			1/8"		50-300	10-18													
				Company: Petro Industrial Solutions, LLC															
Date:				By: 															

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

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PROCEDURE QUALIFICATION RECORD (PQR) PISL-COMB-P1-PQR

(See Section IX, ASME Boiler & Pressure Vessel Code)

Record of Actual Conditions Used to Weld Test Coupon

Company Name: Petro Industrial Solutions, LLC

Procedure Qualification Record No.

PISL-COMB-P1-PQR

Date

Date of coupon for PQR

WPS No.

PISL-COMB-P1

Welding Process (es)

GTAW/SMAW

Types (Manual, Automatic, Semi-Auto)

MANUAL WELDING

JOINTS

Joint Design

Single V - Groove

Backing (Yes) (NO) XBacking Material (Type) N/A

(Refer to backing & retainers.)

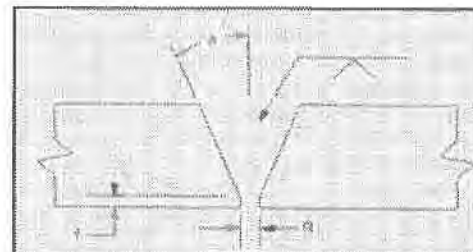
(Refer to backing & retainers.)

☐ Metal☐ Nonmetallic☐ Nonfusing Metal☐ Other

f = 1/16"

r = 1/8"

a = 35°



BASE METALS

Material Spec.

SA-106

Type or Grade

Gr. B

P-No. 1to P-No. 1

Thickness of Test Coupon

0.432"

Diameter of Test Coupon

6

Other N/A

POSTWELD HEAT TREATMENT

Temperature

N/A

Time

N/A

Other

N/A

GAS

Gas (es)

Percent Composition

Argon

100%

30 CFH

Shielding

N/A

N/A

N/A

Trailing

N/A

N/A

N/A

Backing

N/A

N/A

N/A

Electrical Characteristics

Current

Direct Current (DC)

Polarity

Straight (EN) / Reverse (EP)

Amps.

110-130(GTAW)/70-85 (SMAW) Volts 12-25

Tungsten Electrode Size

0.062" 2% Thoriated

Other

N/A

FILLER METALS

SFA Specification

1

2

AWS Classification

5.1

5.18

Filler Metal Analysis A-No.

E-7018

ER70S-3

Size of Filler Metal

1

1

Other

1/8"

1/8"

N/A

N/A

N/A

N/A

Deposited Weld Metal

0.125"

0.307"

POSITION

Position of Groove

6G

Weld Progression (Uphill, Downhill)

Uphill

Other

N/A

TECHNIQUE

Travel Speed

3 IPM

String or Weave Bead

String

Oscillation

No

Multipass or Single Pass (per side)

Multipass

Single or Multipass Electrodes

Single

Other

N/A

PREHEAT

Preheat Temp.

Ambient (>50°F)

Interpass Temp.

500°F max

Other

N/A

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

Page 2 of 2

PROCEDURE QUALIFICATION RECORD (PQR) PISL-COMB-P1-PQR

(See Section IX, ASME Boiler & Pressure Vessel Code)
Record of Actual Conditions Used to Weld Test Coupon

TENSILE TEST

Specimen No.	Width (in)	Thickness (in)	Area (in ²)	Ultimate Total Load (lb)	Ultimate Tensile Strength (psi)	Type of Failure & Location
T-01	0.753	0.432	0.325	21,258	65,350	Ductile/Base Metal
T-02	0.751	0.432	0.324	20,938	64,540	Ductile/Base Metal

GUIDED - BEND TESTS

Type and Figure No.	Result
R-1 Root Bend QW 462.3 (a)	ACCEPTED
R-2 Root Bend QW 462.3 (a)	ACCEPTED
F-1 Face Bend QW 462.3 (a)	ACCEPTED
F-2 Face Bend QW 462.3 (a)	ACCEPTED

TOUGHNESS TESTS

Specimen No.	Notch Location	Notch Type	Test Temp.	Impact Values	Lateral Exp.		Drop Weight	
					% Shear	Mils	Break	No Break
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FILLET-WELDS TEST

Result--Satisfactory: Yes N/A No N/A Penetration into Parent Metal: Yes/No N/A

Macro--Result N/A

OTHER TESTS

Type of Test N/A
Deposited Analysis N/A
Other N/A

Welder's Name: Daniel Martinez Clock No. 6941 Stamp No. 6941

Tests conducted by: INI Corp.

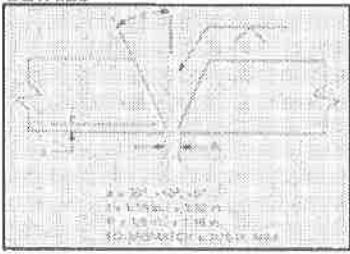
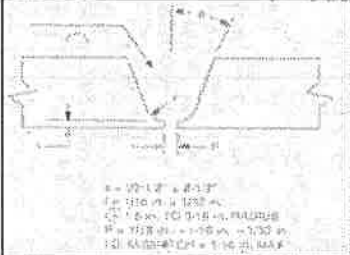
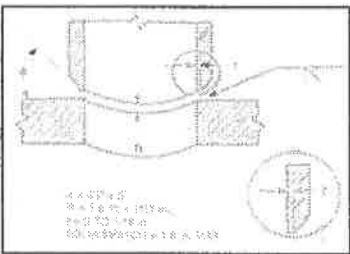
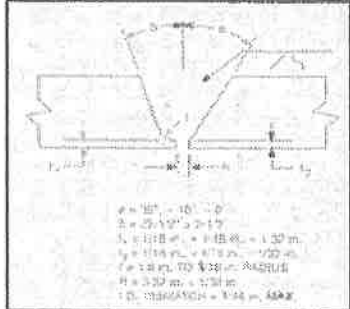
Mechanical Test Conducted by: Gilberto Martinez Test No. PISL-052418-02

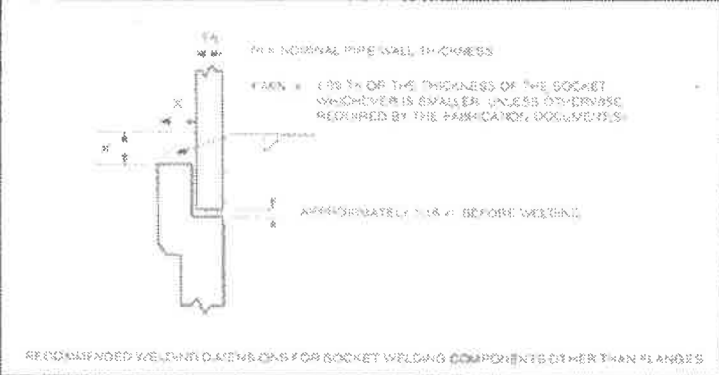
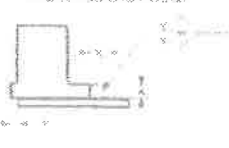
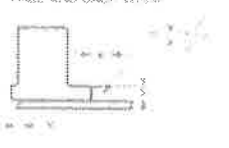
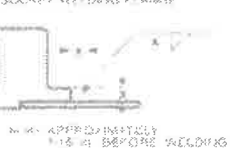
We Certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

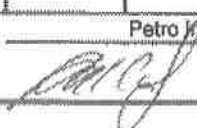
Company: Petro Industrial Solutions, LLC

Date: 24-May-2018

By: 

Petro Industrial Solutions, LLC PO Box 26303 Christiansted, VI 00824		Page 1 of 3
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-GTAW-SS (Section IX, ASME Boiler & Pressure Vessel Code)		
Company Name: Petro Industrial Solutions, LLC		By: Procedure Creator
Welding Procedure No. PISL-GTAW-SS	Date	Supporting PQR No. PISL-GTAW-SS-PQR
Rev. No. 0	Date	
Welding Process (es) GTAW	Type (s)	Manual
(Automatic, Manual, Machine, or Semi-Auto)		
JOINTS		
Joint Design <u>Single V - Groove</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u>		
(Refer to backing & retainers.)		
<input type="checkbox"/> Metal	<input type="checkbox"/> Nonfusing Metal	
<input type="checkbox"/> Nonmetallic	<input type="checkbox"/> Other	
Joint Design <u>Single U - Groove</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u>		
(Refer to backing & retainers.)		
(Refer to backing & retainers.)		
Joint Design <u>Branch Connection</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u>		
(Refer to backing & retainers.)		
(Refer to backing & retainers.)		
Joint Design <u>Groove Connection</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u>		
(Refer to backing & retainers.)		
(Refer to backing & retainers.)		
Joint Design <u>Fillet Weld</u>		
Backing (Yes) _____ (NO) <u>X</u>		
Backing Material (Type) <u>N/A</u>		
(Refer to backing & retainers.)		
(Refer to backing & retainers.)		
DETAILS		
		
		
		
		
ALL JOINTS		

Petro Industrial Solutions, LLC PO Box 26303 Christiansburg, VA 00624		Page 2 of 3
WELDING PROCEDURE SPECIFICATIONS (Section IX, ASME Boiler & Pressure Vessel Code)		(WPS) PISL-QTAW-SS
JOINTS (CONT'D) Joint Design _____ <u>Socket Weld</u> Backing (Yes) _____ (NO) _____ <u>X</u> Backing Material (Type) _____ <u>N/A</u> (Refer to backing & retainers.)		DETAILS (see below)
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Metal <input type="checkbox"/> Nonmetallic </div> <div style="width: 45%;"> <input type="checkbox"/> Nonfusing Metal <input type="checkbox"/> Other </div> </div>		
 <p style="text-align: center; font-size: small;">RECOMMENDED WELDING DIMENSIONS FOR SOCKET WELDING COMPONENTS OTHER THAN FLANGES</p>		
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p style="font-size: x-small;">FRONT AND BACK WELD</p> </div> <div style="text-align: center;">  <p style="font-size: x-small;">FACE AND BACK WELD</p> </div> <div style="text-align: center;">  <p style="font-size: x-small;">SOCKET WELD FLANGE</p> </div> </div> <p style="text-align: center; font-size: x-small;">X MIN = 1/8 IN OR THE THICKNESS OF THE HUB WHICHEVER IS SMALLER, UNLESS OTHERWISE REQUIRED BY THE FABRICATION DOCUMENTS Y MIN = 1/8 IN OR THE THICKNESS OF THE HUB WHICHEVER IS SMALLER, UNLESS OTHERWISE REQUIRED BY THE FABRICATION DOCUMENTS Z MIN = NOMINAL PIPE WALL THICKNESS</p> <p style="text-align: center; font-size: x-small;">RECOMMENDED WELDING DIMENSIONS FOR FLANGES</p>		
Base Metals P-No. <u>8</u> Group No. <u>1,2,3,4</u> to P-No. <u>8</u> Group No. <u>1,2,3,4</u> OR Specification Type and grade _____ <u>SA167/182/213/240/249/269/312/358/376/403/409/479/666.TP316.T316L</u> to specification type and grade _____ <u>SA167/182/213/240/249/269/312/358/376/403/409/479/666.TP316.T316L</u> OR Chem. Analysis and Mech. Prop. _____ <u>N/A</u> to Chem. Analysis and Mech. Prop. _____ <u>N/A</u>		
Thickness Range: Base Metal: _____ <u>0.0625" to 0.436"</u> Pipe Dia. Range: _____ <u>1" OD to Unlimited</u>		
Filler Metals		
Spec. No. (SFA)	<u>Root & Fill</u>	
AWS No. (CLASS)	<u>A6.9</u>	
F-No.	<u>ERXXX</u>	
A-No.	<u>F-6</u>	
Size of Filler Metal	<u>A-8</u>	
Filler Metal Form	<u>1/16", 3/32", 1/8"</u>	
Deposited Weld Metal	<u>Bare Rod</u>	
Thickness Range (Groove)	<u>0.436" max</u>	
Thickness Range (Fillet)	<u>0.0625" to 0.436"</u>	
Electrode-Flux (class)	<u>All</u>	
Flux Trade Name	<u>N/A</u>	
Consumable Insert	<u>N/A</u>	
Other	<u>Maximum Misalignment= 3/32</u>	

Petro Industrial Solutions, LLC PO Box 26303 Christiansted, VI 00824						Page 3 of 3		
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-GTAW-SS								
(See Section IX, ASME Boiler & Pressure Vessel Code)								
POSITIONS		ALL		POSTWELD HEAT TREATMENT				
Position (s) of Groove				Temperature Range				
Welding Progression: Up / Down				Time Range				
Position (s) of Fillet		N/A						
		GAS		Percent Composition				
PREHEAT				Gas (s)		Flow Rate		
Preheat Temp.		50°F Min						
Interpass Temp.		N/A						
(Continuous or special heating is not required)		Standing	Argon	100%	20-60			
		Trailing	N/A	N/A	N/A			
		Backing	Argon	100%	Oct-60			
ELECTRICAL CHARACTERISTICS								
Current AC or DC		DC		Polarity		Straight (GTAW)		
Amps (Range)		See Table		Volts (Range)		See Table		
Tungsten Electrode Size and Type				2% Thoriated 0.062" to 0.093" (or Ceriated) (Pure Tungsten, 2% Thoriated, 2% Ceriated, etc.)				
Mode of Metal Transfer for GTAW				N/A (Spray arc, short circuiting arc, etc.)				
Electrode Wire feed speed range				N/A				
TECHNIQUE								
String or Weave Bead				Either				
Orifice or Gas Cup Size				1/4" to 1/2"				
Initial and Interpass Cleaning				Mechanical only (joint shall be dry prior to welding)				
Method of back gouging				Mechanical or Thermal (when required by joint configuration)				
Oscillation				N/A				
Contact Tube to Work Distance				N/A				
Multiple or Single Pass (per side)				Both				
Multiple or Single Electrodes				Single				
Travel Speed (RANGE)				See Table				
Peening				Not Allowed				
Other				N/A				
SMAW GENERAL WELDING TECHNIQUE								
Passes may be made with stringer beads or weave beads as required.								
Weld Process	Electrode	Weld Layer	Filler Diameter	Current		Volts Range	Travel Speed IPM/RPM	Other (e.g., Remarks, Comments)
				Type Polar.	AMP Range Low - High			
GTAW weld with Filler Metal	GTAW	Root/Fill	1/16"	Straight DC (EN)	50-130	10-18	As Required	No Comments
			3/32"		50-175	12-20		
			1/8"		50-220	12-20		
				Company: Petro Industrial Solutions, LLC				
Date:				By: 				

Petro Industrial Solutions, LLC
PO Box 25363
Christiansburg, VA 24084

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PROCEDURE QUALIFICATION RECORD**(PQR) PISL-GTAW-SS-PQR**

(See Section IX, ASME Boiler & Pressure Vessel Code)
Record of Actual Conditions Used to Weld Test Coupon

Company Name: Petro Industrial Solutions, LLC

Procedure Qualification Record No.

PISL-GTAW-SS-PQR

Date

Date of coupon for PQR

WPS No.

PISL-GTAW-SS

Welding Process (es)

GTAW

Types (Manual, Automatic, Semi-Auto)

MANUAL WELDING

JOINTS

Joint Design

Single V - Groove

Backing (Yes) (NO) XBacking Material (Type) N/A

(Refer to backing & retainers.)

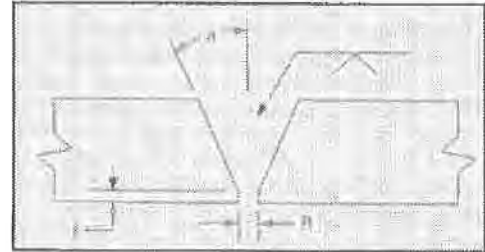
(Refer to backing & retainers.)

☐ Metal☐ Nonmetallic☐ Nonfusing Metal☐ Other

f ≈ 1/16"

r ≈ 1/8"

α ≈ 30°

**BASE METALS**

Material Spec.

SA-312

Type or Grade

Gr. B

P-No.

8

to P-No.

8

Thickness of Test Coupon

0.109"

Diameter of Test Coupon

2

Other

N/A

POSTWELD HEAT TREATMENT

Temperature

N/A

Time

N/A

Other

N/A

GAS

Gas (es)

Percent Composition

(Mixture)

Flow Rate

Shielding

Argon

100%

20 - 60 CFH

Trailing

None

N/A

N/A

Backing

Argon

100%

10 - 60 CFH

FILLER METALS

1

SFA Specification

5.9

AWS Classification

ER316L

Filler Metal Analysis A-No.

8

Size of Filler Metal

1/8"

Other

N/A

Electrical Characteristics

Current

Direct Current (DC)

Polarity

Straight (EN)

Amps.

63

Volts

12

Tungsten Electrode Size

0.062" 2% Thoriated

Other

N/A

Deposited Weld Metal

0.109"

POSITION

Position of Groove

6G

Weld Progression (Uphill, Downhill)

Uphill

Other

N/A

TECHNIQUE

Travel Speed

3 IPM

String or Weave Bead

String

Oscillation

No

Multipass or Single Pass (per side)

Multipass

Single or Multipass Electrodes

Single

Other

N/A

PREHEAT

Preheat Temp.

Ambient (>50°F)

Interpass Temp.

N/A

Other

N/A

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

Page 2 of 2

PROCEDURE QUALIFICATION RECORD (PQR) PISL-GTAW-SS-PQR

(See Section IX, ASME Boiler & Pressure Vessel Code)
Record of Actual Conditions Used to Weld Test Coupon

TENSILE TEST

Specimen No.	Width (in)	Thickness (in)	Area (in ²)	Ultimate Total Load (lb)	Ultimate Tensile Strength (psi)	Type of Failure & Location
T-01	0.77	0.112	0.086	7,080	82,100	Base Metal
T-02	0.78	0.111	0.087	7,130	82,350	Base Metal

GUIDED - BEND TESTS

Type and Figure No.
R-1 Root Bend QW 462.3 (a)
R-2 Root Bend QW 462.3 (a)
F-1 Face Bend QW 462.3 (a)
F-2 Face Bend QW 462.3 (a)

Result
ACCEPTED
ACCEPTED
ACCEPTED
ACCEPTED

TOUGHNESS TESTS

Specimen No.	Notch Location	Notch Type	Test Temp.	Impact Values	Lateral Exp.		Drop Weight	
					% Shear	Mils	Break	No Break
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FILLET-WELDS TEST

Result—Satisfactory: Yes N/A No N/A Penetration into Parent Metal: Yes/No N/A

Macro—Result N/A

OTHER TESTS

Type of Test N/A
Deposited Analysis N/A
Other N/A

Welder's Name: Daniel Martinez Clock No. 6941 Stamp No. 6941

Tests conducted by: INI Corp.

Mechanical Test Conducted by: Gilberto Martinez Test No. PISL-052918-01

We Certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Company: Petro Industrial Solutions, LLC

Date: 29-May-2018

By: 

Petro Industrial Solutions, LLC PO Box 25303 Christiansted, VI 00824		Page 1 of 3
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-SMAW-P1 (Section IX, ASME Boiler & Pressure Vessel Code)		
Company Name: Petro Industrial Solutions, LLC		By:
Welding Procedure No. PISL-SMAW-P1	Date	Supporting PQR No. PISL-SMAW-P1-PQR
Rev. No. 0	Date	
Welding Process (es) SMAW	Type (s) Manual	(Automatic, Manual, Machine, or Semi-Auto)

JOINTS

Joint Design Single V - Groove

Backing (Yes) _____ (NO) X

Backing Material (Type) N/A
(Refer to backing & retainers.)

☐ Metal
☐ Nonmetallic

☐ Nonfusing Metal
☐ Other

Joint Design Single U - Groove

Backing (Yes) _____ (NO) X

Backing Material (Type) N/A
(Refer to backing & retainers.)

Joint Design Branch Connection

Backing (Yes) _____ (NO) X

Backing Material (Type) N/A
(Refer to backing & retainers.)

Joint Design Groove Connection

Backing (Yes) _____ (NO) X


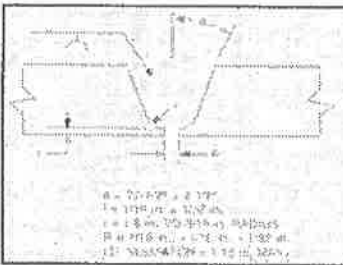
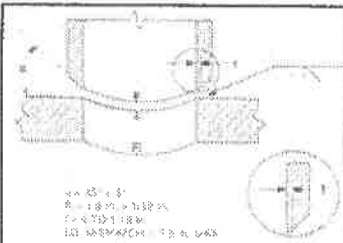
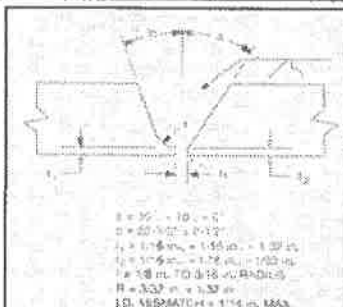
Backing Material (Type) N/A
(Refer to backing & retainers.)

Joint Design Fillet Weld

Backing (Yes) _____ (NO) X

Backing Material (Type) N/A
(Refer to backing & retainers.)

DETAILS

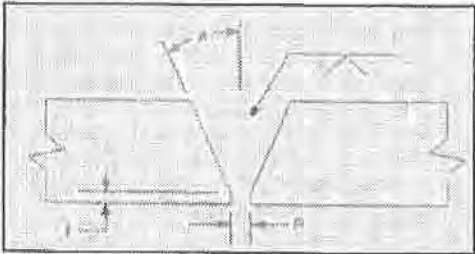
ALL JOINTS

Petro Industrial Solutions, LLC PO Box 28303 Christiansted, VI 00824		Page 2 of 3
WELDING PROCEDURE SPECIFICATIONS (Section IX, ASME Boiler & Pressure Vessel Code)		(WPS) PISL-SMAW-P1
JOINTS (CONT'D)		DETAILS (see below)
Joint Design _____ <u>Socket Weld</u>		
Backing (Yes) _____ (NO) _____ <u>X</u>		
Backing Material (Type) _____ <u>N/A</u>		
(Refer to backing & retainers.)		
<input type="checkbox"/> Metal	<input type="checkbox"/> Nonfusing Metal	
<input type="checkbox"/> Nonmetallic	<input type="checkbox"/> Other	
<p style="text-align: center;">RECOMMENDED WELDING DIMENSIONS FOR SOCKET WELDING COMPONENTS OTHER THAN FLANGES</p>		
<p style="text-align: center;">RECOMMENDED WELDING DIMENSIONS FOR FLANGES</p>		
Base Metals		
P-No. _____ <u>1</u>	Group No. _____ <u>1</u>	to P-No. _____ <u>1</u> Group No. _____ <u>2</u>
OR		
Specification Type and grade		Spec SA 53/105/108/134/135/178/179/181/192/210/211/234/266/333/334/350/372
to specification type and grade		Spec SA 53/105/108/134/135/178/179/181/192/210/211/234/266/333/334/350/372
OR		
Chem. Analysis and Mech. Prop.		N/A
to Chem. Analysis and Mech. Prop.		N/A
Thickness Range:		
Base Metal:		0.0625" to 0.436"
Pipe Dia. Range:		1" OD to Unlimited
Filler Metals		
Spec. No. (SFA)		<u>Root & Fil</u>
AWS No. (CLASS)		A5.1
F-No.		E8010 / E-7018
A-No.		3 (E-8010) / 4 (E-7018)
Size of Filler Metal		1
Filler Metal Form		3/32", 1/8"
Deposited Weld Metal		Electrode (Core Wire)
Thickness Range (Groove):		(E-8010) 0.125" max / (E-7018) 0.436" max
Thickness Range (Fillet):		0.0625" to 0.436"
Electrode-Flux (class)		All
Flux Trade Name		N/A
Consumable Insert		N/A
Other		Maximum Misalignment = 3/32

Petro Industrial Solutions, LLC PO Box 26303 Christiansburg, VA 00824						Page 3 of 3		
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-SMAW-P1								
(See Section IX, ASME Boiler & Pressure Vessel Code)								
POSITIONS		ALL		POSTWELD HEAT TREATMENT				
Position (s) of Groove				Temperature Range				
Welding Progression: Up / Down		Up		Time Range				
Position (s) of Fillet		N/A		N/A				
PREHEAT		50°F Min		GAS		Percent Composition		
Preheat Temp.				Gas (s)		(Mixture)		Flow Rate
Interpass Temp.		50°F Min / 500°F Max		Standing		N/A		
(Continuous or special heating is not required)				Trailing		N/A		
				Backing		N/A		
ELECTRICAL CHARACTERISTICS								
Current AC or DC		DC		Polarity		EP (Reverse)		
Amps (Range)		See Table		Volts (Range)		See Table		
Tungsten Electrode Size and Type				N/A (Pure Tungsten, 2% Thoriated, 2% Ceriated, etc.)				
Mode of Metal Transfer for GMAW				N/A (Spray arc, short circuiting arc, etc.)				
Electrode Wire feed speed range				N/A				
TECHNIQUE								
String or Weave Bead				Either				
Orifice or Gas Cup Size				N/A				
Initial and Interpass Cleaning				Mechanical only (joint shall be dry prior to welding)				
Method of back gouging				Mechanical or Thermal (when required by joint configuration)				
Oscillation				N/A				
Contact Tube to Work Distance				N/A				
Multiple or Single Pass (per side)				Both				
Multiple or Single Electrodes				Single				
Travel Speed (RANGE)				See Table				
Peening				Not Allowed				
Other				N/A				
SMAW GENERAL WELDING TECHNIQUE								
Passes may be made with stringer beads or weave beads as required.								
Weld Process	Electrode	Weld Layer	Filler Diameter	Current		Volts Range	Travel Speed IPM/RPM	Other (e.g., Remarks, Comments)
				Type Polar.	AMP Range Low - High			
SMAW	E-6010	Root	3/32"	Reverse	40-80	18-23	As Required	Ambient Temperature
			1/8"		75-125	21-24		
SMAW	E-7018	Fill	3/32"	Reverse	70-110	18-23	As Required	Holding Oven (50°F to 250°F)
			1/8"		105-155	24-27		

Date: 6/1/2018

Company: Petro Industrial Solutions, LLC
 By: [Signature]

Petro Industrial Solutions, LLC PO Box 26303 Christiansted, VI 00824				Page 1 of 2																																								
PROCEDURE QUALIFICATION RECORD (PQR) PISL-SMAW-P1-PQR																																												
(See Section IX, ASME Boiler & Pressure Vessel Code) Record of Actual Conditions Used to Weld Test Coupon																																												
Company Name: Procedure Qualification Record No. WPS No. Welding Process (es) Types (Manual, Automatic, Semi-Auto)		Petro Industrial Solution, LLC PISL-SMAW-P1-PQR PISL-SMAW-P1 SHIELD METAL ARC WELDING (SMAW) MANUAL WELDING																																										
		Date		30-May-2018																																								
JOINTS																																												
Joint Design _____ <u>Single V - Groove</u> Backing (Yes) _____ (NO) <u>X</u> Backing Material (Type) _____ <u>N/A</u> <div style="display: flex; justify-content: space-between; font-size: x-small;"> (Refer to backing & retainers.) (Refer to backing & retainers.) </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="display: flex; align-items: center;"> <input type="checkbox"/> Metal <input type="checkbox"/> Nonmetallic </div> <div style="display: flex; align-items: center;"> <input type="checkbox"/> Nonfusing Metal <input type="checkbox"/> Other </div> </div>		f = 1/16" r = 1/8" a = 35°																																										
BASE METALS			POSTWELD HEAT TREATMENT																																									
Material Spec.		SA-106		Temperature																																								
Type or Grade		Gr. B		Time																																								
P-No. <u>1</u>		to P-No. <u>1</u>		Other																																								
Thickness of Test Coupon		0.300"																																										
Diameter of Test Coupon		3"																																										
Other		N/A																																										
FILLER METALS <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th></th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>SFA Specification</td> <td>5.1</td> <td>5.1</td> </tr> <tr> <td>AWS Classification</td> <td>E-6010</td> <td>E-7018</td> </tr> <tr> <td>Filler Metal Analysis A-No.</td> <td>1</td> <td>1</td> </tr> <tr> <td>Size of Filler Metal</td> <td>1/8"</td> <td>1/8"</td> </tr> <tr> <td>Other</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Deposited Weld Metal</td> <td>0.125"</td> <td>0.175"</td> </tr> </tbody> </table>				1	2	SFA Specification	5.1	5.1	AWS Classification	E-6010	E-7018	Filler Metal Analysis A-No.	1	1	Size of Filler Metal	1/8"	1/8"	Other	N/A	N/A	Deposited Weld Metal	0.125"	0.175"	GAS <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th rowspan="2"></th> <th rowspan="2">Gas (es)</th> <th colspan="2">Percent Composition</th> </tr> <tr> <th>(Mixture)</th> <th>Flow Rate</th> </tr> </thead> <tbody> <tr> <td>Shielding</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Trailing</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Backing</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>				Gas (es)	Percent Composition		(Mixture)	Flow Rate	Shielding	N/A	N/A	N/A	Trailing	N/A	N/A	N/A	Backing	N/A	N/A	N/A
				1	2																																							
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Trailing	N/A	N/A	N/A																																									
Backing	N/A	N/A	N/A																																									
			Electrical Characteristics <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th colspan="2">Current</th> <th colspan="2">Direct Current (DC)</th> </tr> <tr> <th colspan="2">Polarity</th> <th colspan="2">Reverse (EP)</th> </tr> </thead> <tbody> <tr> <td>Amps.</td> <td>90-115</td> <td>Volts</td> <td>21-25</td> </tr> <tr> <td>Tungsten Electrode Size</td> <td colspan="3">N/A</td> </tr> <tr> <td>Other</td> <td colspan="3">N/A</td> </tr> </tbody> </table>			Current		Direct Current (DC)		Polarity		Reverse (EP)		Amps.	90-115	Volts	21-25	Tungsten Electrode Size	N/A			Other	N/A																					
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Other	N/A																																											
POSITION			TECHNIQUE																																									
Position of Groove		6G		Travel Speed																																								
Weld Progression (Uphill, Downhill)		Uphill		String or Weave Bead																																								
Other		N/A		Oscillation																																								
				Multipass or Single Pass (per side)																																								
				Single or Multipass Electrodes																																								
				Other																																								
PREHEAT																																												
Preheat Temp.		Ambient (>50°F)																																										
Interpass Temp.		N/A																																										
Other		N/A																																										

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

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PROCEDURE QUALIFICATION RECORD (PQR) PISL-SMAW-P1-PQR

(See Section IX, ASME Boiler & Pressure Vessel Code)
Record of Actual Conditions Used to Weld Test Coupon

TENSILE TEST

Specimen No.	Width (in)	Thickness (in)	Area (in ²)	Ultimate Total Load (lb)	Ultimate Tensile Strength (psi)	Type of Failure & Location
T-01	0.750	0.300	0.225	14,557	64,700	Ductile/Base Metal
T-02	0.751	0.302	0.228	14,765	65,100	Ductile/Base Metal

GUIDED - BEND TESTS

Type and Figure No.
R-1 Root Bend QW 462.3 (a)
R-2 Root Bend QW 462.3 (a)
F-1 Face Bend QW 462.3 (a)
F-2 Face Bend QW 462.3 (a)

Result
ACCEPTED
ACCEPTED
ACCEPTED
ACCEPTED

TOUGHNESS TESTS

Specimen No.	Notch Location	Notch Type	Test Temp.	Impact Values	Lateral Exp.		Drop Weight	
					% Shear	Mils	Break	No Break
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FILLET-WELDS TEST

Result--Satisfactory: Yes N/A No N/A Penetration into Parent Metal: Yes/No N/A

Macro--Result N/A

OTHER TESTS

Type of Test N/A
Deposited Analysis N/A
Other N/A

Welder's Name: Daniel Martinez Clock No. 6941 Stamp No. 6941

Tests conducted by: INI Corp.

Mechanical Test Conducted by: Gilberto Martinez Test No. PISL-053018-01

We Certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Company: Petro Industrial Solutions, LLC

Date: 30-May-2018

By: 

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

Page 1 of 4

WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-SMAW-PLP2

(AWS D1.1 - Structural Steel Welding Code)

Company Name: Petro Industrial Solutions, LLC		By:	
Welding Procedure No. PISL-SMAW-PLP2	Date	Supporting PQR No. PISL-SMAW-PLP2-PQR	
Rev. No. 0	Date		
Welding Process (es) SMAW	Type (s) Manual		
(Automatic, Manual, Machine, or Semi-Auto)			

JOINTS (Joints permitted in the latest edition of AWS D1.1 are also permitted)

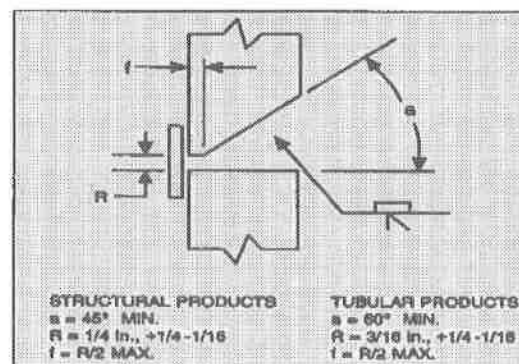
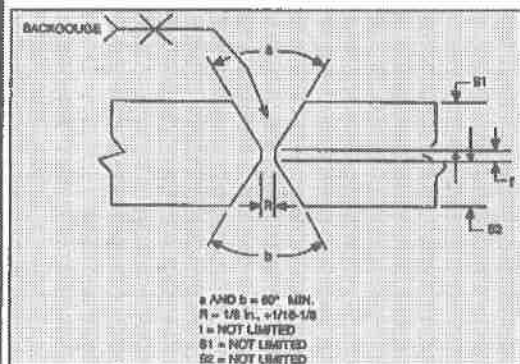
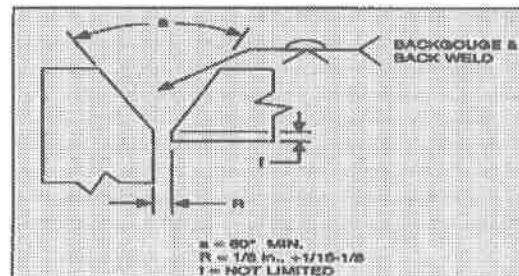
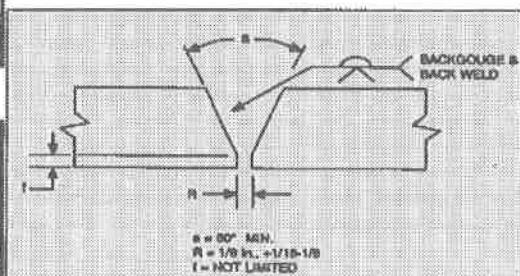
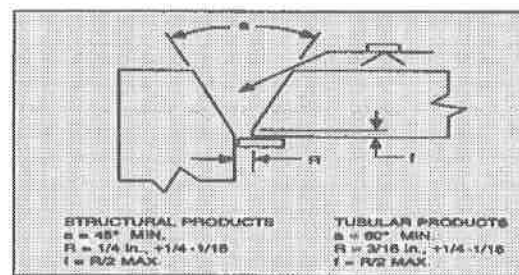
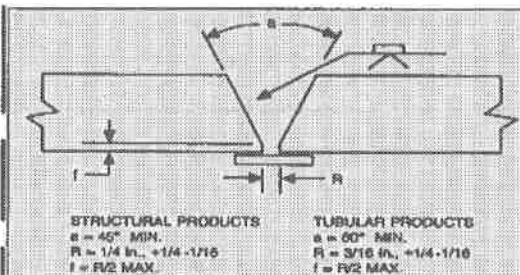
Joint Design Fillet Weld

Backing (Yes) (NO) X

Backing Material (Type) N/A

ALL JOINTS

Backing Material (when required): Carbon Steel P-1/Group 1, 2 or 3



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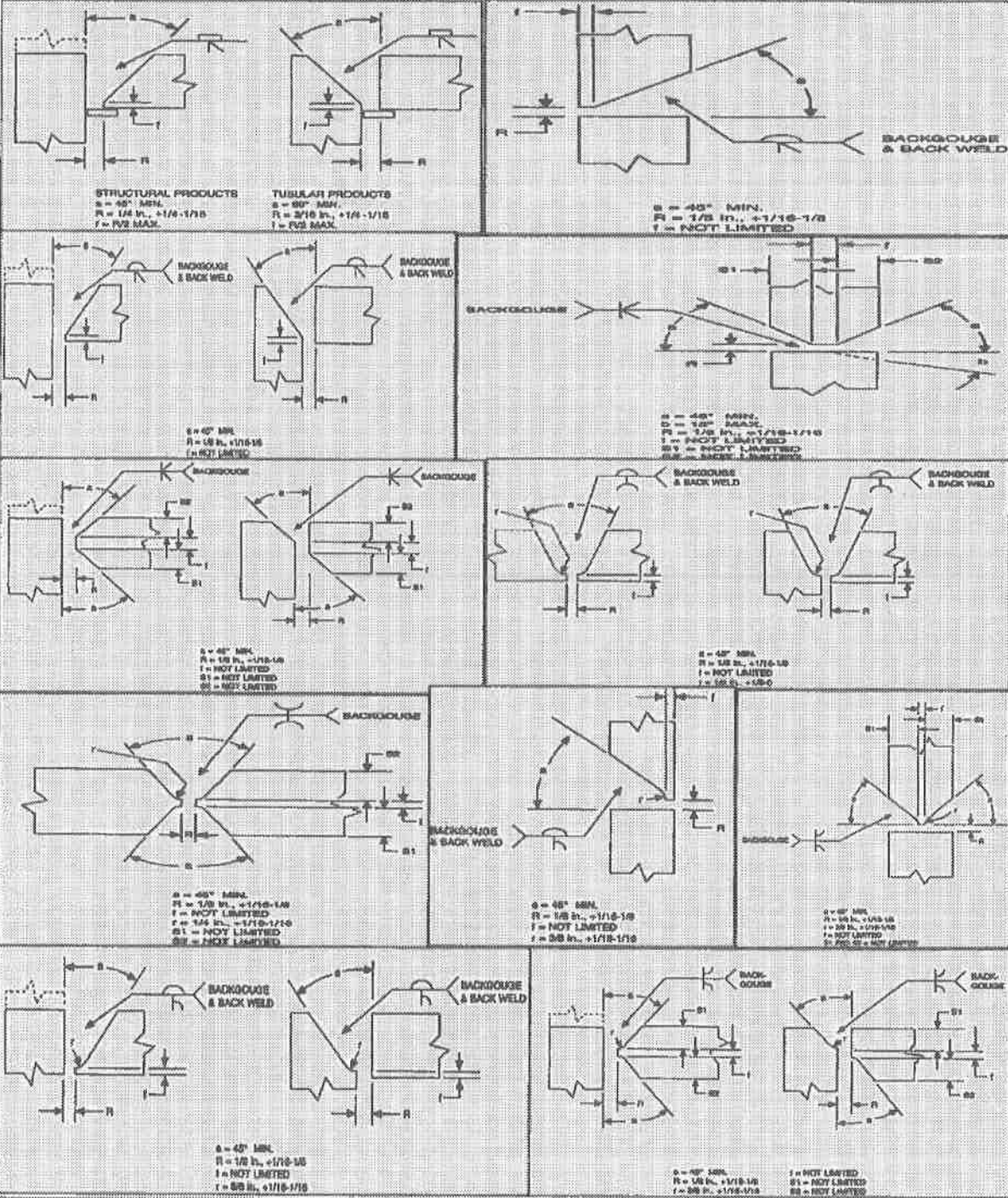
Page 2 of 4

WELDING PROCEDURE SPECIFICATIONS

(WPS) PISL-SMAW-PLP2

(AWS D1.1 - Structural Steel Welding Code)

JOINTS (cont'd)



Petro Industrial Solutions, LLC P.O. Box 26303 Christiansburg, VA 22624		Page 3 of 4
WELDING PROCEDURE SPECIFICATIONS (WPS) PISL-SMAW-PLP2		
(AWS D1.1 - Structural Steel Welding Code)		
Base Metals		
P-No. <u>1</u>	Group No. <u>1</u>	to P-No. <u>1</u> Group No. <u>2</u>
OR		
Specification Type and grade to specification type and grade	A-36, A-572 Gr.45/50/55/60/70, A-516 Gr.70, A-588, A-514 T-1, A-285 Gr.C, A-515 Gr.70, A-283 Gr.D	
OR	A-36, A-572 Gr.45/50/55/60/70, A-516 Gr.70, A-588, A-514 T-1, A-285 Gr.C, A-515 Gr.70, A-283 Gr.D	
Chem. Analysis and Mech. Prop. to Chem. Analysis and Mech. Prop.	N/A	
Thickness Range:	N/A	
Base Metal:	0.125" to 1.500"	
Pipe Dia. Range:	1" OD to Unlimited	
Filler Metals		
Spec. No. (SFA)	Root & Fill	
AWS No. (CLASS)	A5.1	
F-No.	E-70XX	
A-No.	4	
Size of Filler Metal	1	
Filler Metal Form	3/32", 1/8", 5/32"	
Deposited Weld Metal	Electrode (Core Wire)	
Thickness Range (Groove)	1.500" max. (plus reinforcement)	
Thickness Range (Fillet)	0.125" to 1.500"	
Electrode-Flux (class)	0.125" min.	
Flux Trade Name	N/A	
Consumable Insert	N/A	
Other	Nonmetallic or nonfusing metal retainers are not permitted	

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

Page 4 of 4

WELDING PROCEDURE SPECIFICATIONS**(WPS) PISL-SMAW-PLP2**

(AWS D1.1 - Structural Steel Welding Code)

POSITIONS		POSTWELD HEAT TREATMENT	
Position (s) of Groove	ALL	Temperature Range	N/A
Welding Progression: Up / Down	Up	Time Range	N/A
Position (s) of Fillet	N/A		
PREHEAT		GAS	Percent Composition
Preheat Temp.	50°F Min	Gas (s)	(Mixture)
Interpass Temp.	50°F Min / 500°F Max	Flow Rate	
(Continuous or special heating is not required)		Standing	N/A
		Trailing	N/A
		Backing	N/A

ELECTRICAL CHARACTERISTICS

Current AC or DC	DC	Polarity	EP (Reverse)
Amps (Range)	See Table	Volts (Range)	See Table

Tungsten Electrode Size and Type N/A
(Pure Tungsten, 2% Thoriated, 2% Ceriated, etc.)

Mode of Metal Transfer for GMAW N/A
(Spray arc, short circuiting arc, etc.)

Electrode Wire feed speed range N/A

TECHNIQUE

String or Weave Bead Either

Orifice or Gas Cup Size N/A

Initial and Interpass Cleaning Mechanical only (joint shall be dry prior to welding)

Method of back gouging Mechanical or Thermal (when required by joint configuration)

Oscillation N/A

Contact Tube to Work Distance N/A

Multiple or Single Pass (per side) Both

Multiple or Single Electrodes Either

Travel Speed (RANGE) See Table

Peening Not Allowed

Other Maximum bead thickness = 1/4"

SMAW GENERAL WELDING TECHNIQUE

Passes may be made with stringer beads or weave beads as required.

Weld Process	Electrode	Weld Layer	Filler Diameter	Current		Volts Range	Travel Speed IPM/RPM	Other (e.g., Remarks, Comments)
				Type Polar.	AMP Range Low - High			
SMAW	E-7018	As Required	3/32"	Reverse	70-110	18-23	As Required	Holding Oven (50°F to 250°F)
			1/8"		90-150	21-24		
			5/32"		120-190	24-26		

Company: Petro Industrial Solutions, LLC

Date:

By:

CONFIDENTIAL

Exhibit I

VITOL-011991

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00824

Page 1 of 2

PROCEDURE QUALIFICATION RECORD**(PQR) PISL-SMAW-PLP2-PQR**

(AWS D1.1 - Structural Steel Welding Code)

Record of Actual Conditions Used to Weld Test Coupon

Company Name:**Procedure Qualification Record No.****WPS No.****Welding Process (es)****Types (Manual, Automatic, Semi-Auto)**

Petro Industrial Solutions, LLC

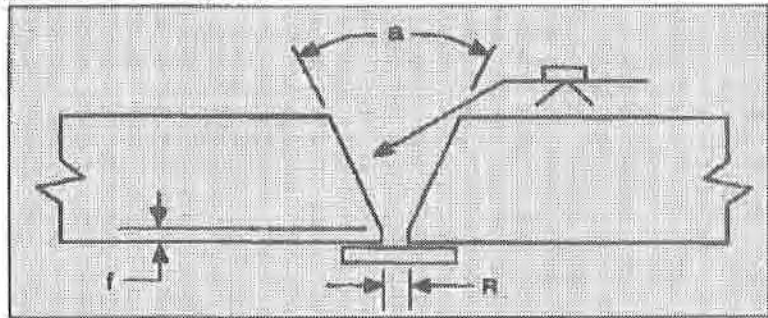
PISL-SMAW-PLP2-PQR

Date 24-May-2018

PISL-SMAW-PLP2

SHIELD METAL ARC WELDING (SMAW)

MANUAL WELDING

JOINTS**Joint Design :** Single V-Groove**Backing Material (Type):** A-36 $f = 1/8"$ $R = 1/4"$ $a = 60^\circ$ **BASE METALS****Material Spec.**

A-36

Type or Grade

N/A

P-No. 1**to P-No.** 1**Thickness of Test Coupon**

1.000"

Diameter of Test Coupon

N/A

Other

N/A

POSTWELD HEAT TREATMENT**Temperature**

N/A

Time

N/A

Other

N/A

GAS**Percent Composition****Gas (es)****(Mixture)****Flow Rate****Shielding**

N/A

N/A

N/A

Trailing

N/A

N/A

N/A

Backing

N/A

N/A

N/A

Electrical Characteristics**Current**

Direct Current (DC)

Polarity

Reverse (EP)

Amps.

90-125

Volts

22

Tungsten Electrode Size

N/A

Other

N/A

FILLER METALS**SFA Specification**

1

AWS Classification

E-7018

Filler Metal Analysis A-No.

1

Size of Filler Metal

1/8"

Other

N/A

Deposited Weld Metal

1.000"

POSITION**Position of Groove**

3G

Weld Progression (Uphill, Downhill)

Uphill

Other

N/A

TECHNIQUE**Travel Speed**

4 IPM

String or Weave Bead

String

Oscillation

No

Multipass or Single Pass (per side)

Multipass

Single or Multipass Electrodes

Single

Other

N/A

PREHEAT**Preheat Temp.**

Ambient (>50°F)

Interpass Temp.

500°F max

Other

N/A

Petro Industrial Solutions, LLC
PO Box 26303
Christiansted, VI 00624

Page 2 of 2

PROCEDURE QUALIFICATION RECORD (PQR) PISL-SMAW-PLP2-PQR

(AWS D1.1 - Structural Steel Welding Code)

Record of Actual Conditions Used to Weld Test Coupon

TENSILE TEST

Specimen No.	Width (In)	Thickness (In)	Area (In ²)	Ultimate Total Load (lb)	Ultimate Tensile Strength (psi)	Type of Failure & Location
T-01	0.751	1.001	0.752	44,616	59,350	Ductile/Base Metal
T-02	0.752	1.003	0.754	45,218	59,950	Ductile/Base Metal

GUIDED - BEND TESTS

Type (Fig. 4.6)

S-1 Side Bend

S-2 Side Bend

S-3 Side Bend

S-4 Side Bend

Result

ACCEPTED

ACCEPTED

ACCEPTED

ACCEPTED

TOUGHNESS TESTS


Specimen No.	Notch Location	Notch Type	Test Temp.	Impact Values	Lateral Exp.		Drop Weight	
					% Shear	Mils	Break	No Break
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

FILLET-WELDS TESTResult--Satisfactory: Yes N/A No N/A Penetration into Parent Metal: Yes/No N/AMacro--Result N/A**OTHER TESTS**

Type of Test N/A
 Deposited Analysis N/A
 Other N/A

Welder's Name: Daniel Martinez Clock No. 6941 Stamp No. 6941Tests conducted by: INI Corp.Mechanical Test Conducted by: Gilberto Martinez Test No. PISL-052418-01

We Certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of AWS D1.1-Structural Welding Code.

Company: Petro Industrial Solutions, LLCDate: 24-May-2018By: 

Welder Performance Qualification Record (WPQ)Welder's Name Edgardo Batista ID. # 9325 Stamp # EB (74)WPS No. PISL-GTAW-SSWelding Process(es) Gas Tungsten Arc Welding (GTAW) Type ManualBase Material(s) SA-106 Gr. B To SA-106 Gr. B Thickness 0.147"Manual or Semi-Automatic Variables for Each Process Actual Values Range Qualified

Backing		F6- Without	F6-With/Without
ASME P-No. To	P- No.	P1 to P1	P1 to P15E
<input type="checkbox"/> Plate <input checked="" type="checkbox"/> Pipe (enter diameter, if pipe)		1/2"	1/2" NPS Minimum
Root/Fill		5.18	5.18
Filler Metal Specification (SFA) Classification		-	-
Root/Fill		6	6
Filler Metal Group No.		-	-
Filler Metal Product Form		Solid Rod	Solid Rod
Consumable Insert for GTAW or PAW		None	None
F 6		0.147"	0.294" Maximum
Weld Deposit Thickness		-	-
Welding Position		6G (Three Coupon)*	All
Maximum Deposition Rate		N/A	
Welding Progression (Uphill/ Downhill)		Uphill	Uphill
Backing Gas for GTAW, PAW, GMAW or FCAW/G		None	With/ Without Argon
GMAW Transfer Mode		N/A	N/A
FCAW/ GTAW Welding Current Type/ Polarity		DC/ EN	DC/EN

*Remarks: * Total weld length: 7.93"

Guide Bend Test Results

<input type="checkbox"/> Side	<input checked="" type="checkbox"/> Trans. Root (R) & Face (F)	<input type="checkbox"/> Long. Root & Face	Results
-	T-011419-74-R1-Figure QW-462.3 (a)		Acceptable
-	T-011419-74-R2-Figure QW-462.3 (a)		Acceptable
-	T-011419-74-F1-Figure QW-462.3 (a)		Acceptable
-	T-011419-74-F2-Figure QW-462.3 (a)		Acceptable

Radiographic Test Results: NoneVisual Examination Results: Face: Acceptable Root: AcceptableWelding Test Conducted By: Guillermo Castro, LIIIMechanical Tests Conducted By: Acuren Inspection Services Laboratory Test No. PAUT021621-EB

We certify that the statements in this record are correct and that the test coupons were prepared, welded, tested in accordance with the requirements of ASME Section IX/2013

Organization: Petro Industrial Solutions, LLCBy: Adrian Melendez Jr., PMDate: 02/19/2021

CONFIDENTIAL

Exhibit I

VITOL-011994

Welder Performance Qualification Record (WPQ)

Welder's Name	Bernardo Cruz	ID. #	9788	Stamp #	BC (45)
WPS No.	PISL-GTAW-SS				
Welding Process(es)	Gas Tungsten Arc Welding (GTAW)	Type	Manual		
Base Material(s)	SA-106 Gr. B	To	SA-106 Gr. B	Thickness	0.147"
Manual or Semi-Automatic Variables for Each Process		Actual Values		Range Qualified	
Backing		F6- Without	F6-With/Without		
ASME P-No. To P- No.		P1 to P1	P1 to P15E		
<input type="checkbox"/> Plate <input checked="" type="checkbox"/> Pipe (enter diameter, if pipe)		1/2"	1/2" NPS Minimum		
	Root/Fill	5.18	5.18		
Filler Metal Specification (SFA) Classification		-	-		
	Root/Fill	6	6		
Filler Metal Group No.		-	-		
Filler Metal Product Form		Solid Rod	Solid Rod		
Consumable Insert for GTAW or PAW		None	None		
	F 6	0.147"	0.294" Maximum		
Weld Deposit Thickness		-	-		
Welding Position		6G (Three Coupon)*	All		
Maximum Deposition Rate		N/A			
Welding Progression (Uphill/ Downhill)		Uphill	Uphill		
Backing Gas for GTAW, PAW, GMAW or FCAW/G		None	With/ Without Argon		
GMAW Transfer Mode		N/A	N/A		
FCAW/ GTAW Welding Current Type/ Polarity		DC/ EN	DC/ EN		
*Remarks: * Total weld length: 7.99"					

Bernardo Cruz

Guide Bend Test Results

<input type="checkbox"/> Side	<input checked="" type="checkbox"/> Trans. Root (R) & Face (F)	<input type="checkbox"/> Long. Root & Face	Results
-	T-011419-45-R1-Figure QW-462.3 (a)		Acceptable
-	T-011419-45-R2-Figure QW-462.3 (a)		Acceptable
-	T-011419-45-F1-Figure QW-462.3 (a)		Acceptable
-	T-011419-45-F2-Figure QW-462.3 (a)		Acceptable

Radiographic Test Results: None

Visual Examination Results: Face: Acceptable Root: Acceptable

Welding Test Conducted By: Guillermo Castro, LIII

Mechanical Tests Conducted By: Acuren Inspection Services Laboratory Test No. PAUT021621-BC

We certify that the statements in this record are correct and that the test coupons were prepared, welded, tested in accordance with the requirements of ASME Section IX/2013

Organization: Petro Industrial Solutions, LLC

By:  Date: 02/19/2021

Adrian Melendez Jr., PM

CONFIDENTIAL

Exhibit I

VITOL-011995

Welder Performance Qualification Record (WPQ)Welder's Name George Rodriguez ID. # 6471 Stamp # JR (10)WPS No. PISL-GTAW-SSWelding Process(es) Gas Tungsten Arc Welding (GTAW) Type ManualBase Material(s) SA-106 Gr. B To SA-106 Gr. B Thickness 0.147"Manual or Semi-Automatic Variables for Each Process Actual Values Range Qualified

Backing		F6- Without	F6-With/Without
ASME P-No. To	P- No.	P1 to P1	P1 to P15E
<input type="checkbox"/> Plate <input checked="" type="checkbox"/> Pipe (enter diameter, if pipe)		1/2"	1/2" NPS Minimum
Root/Fill		5.18	5.18
Filler Metal Specification (SFA) Classification		-	-
Root/Fill		6	6
Filler Metal Group No.		-	-
Filler Metal Product Form		Solid Rod	Solid Rod
Consumable Insert for GTAW or PAW		None	None
F 6		0.147"	0.294" Maximum
Weld Deposit Thickness		-	-
Welding Position		6G (Three Coupon)*	All
Maximum Deposition Rate		N/A	
Welding Progression (Uphill/ Downhill)		Uphill	Uphill
Backing Gas for GTAW, PAW, GMAW or FCAW/G		None	With/ Without Argon
GMAW Transfer Mode		N/A	N/A
FCAW/ GTAW Welding Current Type/ Polarity		DC/ EN	DC/EN

*Remarks: * Total weld length: 7.98"

Guide Bend Test Results

<input type="checkbox"/> Side	<input checked="" type="checkbox"/> Trans. Root (R) & Face (F)	<input type="checkbox"/> Long. Root & Face	Results
-	T-011419-10-R1-Figure QW-462.3 (a)		Acceptable
-	T-011419-10-R2-Figure QW-462.3 (a)		Acceptable
-	T-011419-10-F1-Figure QW-462.3 (a)		Acceptable
-	T-011419-10-F2-Figure QW-462.3 (a)		Acceptable

Radiographic Test Results: NoneVisual Examination Results: Face: Acceptable Root: AcceptableWelding Test Conducted By: Guillermo Castro, LIIIMechanical Tests Conducted By: Acuren Inspection Services Laboratory Test No. PAUT021621-JR

We certify that the statements in this record are correct and that the test coupons were prepared, welded, tested in accordance with the requirements of ASME Section IX/2013

Organization: Petro Industrial Solutions, LLCBy: Adrian Melendez Jr., PMDate: 02/19/2021

CONFIDENTIAL

Exhibit I

VITOL-011996

Welder Performance Qualification Record (WPQ)Welder's Name Jonathan Rodriguez ID. # 7145 Stamp # JR2 (49)WPS No. PISL-GTAW-SSWelding Process(es) Gas Tungsten Arc Welding (GTAW) Type ManualBase Material(s) SA-106 Gr. B To SA-106 Gr. B Thickness 0.147"**Manual or Semi-Automatic Variables for Each Process** **Actual Values** **Range Qualified**

Backing		F6- Without	F6-With/Without
ASME P-No. To	P- No.	P1 to P1	P1 to P15E
<input type="checkbox"/> Plate <input checked="" type="checkbox"/> Pipe (enter diameter, if pipe)		1/2"	1/2" NPS Minimum
Root/Fill		5.18	5.18
Filler Metal Specification (SFA) Classification		-	-
Root/Fill		6	6
Filler Metal Group No.		-	-
Filler Metal Product Form		Solid Rod	Solid Rod
Consumable Insert for GTAW or PAW		None	None
F 6		0.147"	0.294" Maximum
Weld Deposit Thickness		-	-
Welding Position		6G (Three Coupon)*	All
Maximum Deposition Rate		N/A	
Welding Progression (Uphill/ Downhill)		Uphill	Uphill
Backing Gas for GTAW, PAW, GMAW or FCAW/G		None	With/ Without Argon
GMAW Transfer Mode		N/A	N/A
FCAW/ GTAW Welding Current Type/ Polarity		DC/ EN	DC/EN

*Remarks: * Total weld length: 7.91"

Guide Bend Test Results

<input type="checkbox"/> Side	<input checked="" type="checkbox"/> Trans. Root (R) & Face (F)	<input type="checkbox"/> Long. Root & Face	Results
-	T-052918-49-R1-Figure QW-462.3 (a)		Acceptable
-	T-052918-49-R2-Figure QW-462.3 (a)		Acceptable
-	T-052918-49-F1-Figure QW-462.3 (a)		Acceptable
-	T-052918-49-F2-Figure QW-462.3 (a)		Acceptable

Radiographic Test Results: NoneVisual Examination Results: Face: Acceptable Root: AcceptableWelding Test Conducted By: Guillermo Castro, LIIIMechanical Tests Conducted By: Acuren Inspection Services Laboratory Test No. PAUT033021-JR2

We certify that the statements in this record are correct and that the test coupons were prepared, welded, tested in accordance with the requirements of ASME Section IX/2013

Organization: Petro Industrial Solutions, LLCBy: Adrian Melendez Jr., PMDate: 04/01/2021

CONFIDENTIAL

Exhibit I

VITOL-011998

Welder Performance Qualification Record (WPQ)Welder's Name Richael Philips ID. # 4799 Stamp # RP (51)WPS No. PISL-GTAW-SSWelding Process(es) Gas Tungsten Arc Welding (GTAW) Type ManualBase Material(s) SA-106 Gr. B To SA-106 Gr. B Thickness 0.147"Manual or Semi-Automatic Variables for Each Process Actual Values Range Qualified

Backing F6- Without F6-With/Without

ASME P-No. To P-No. P1 to P1 P1 to P15E

☐ Plate ☒ Pipe (enter diameter, if pipe) 1/2" 1/2" NPS Minimum

Root/Fill 5.18 5.18

Filler Metal Specification (SFA) Classification - -

Root/Fill 6 6

Filler Metal Group No. - -

Filler Metal Product Form Solid Rod Solid Rod

Consumable Insert for GTAW or PAW None None

Weld Deposit Thickness 0.147" 0.294" Maximum

Welding Position 6G (Three Coupon)* All

Maximum Deposition Rate N/A

Welding Progression (Uphill/ Downhill) Uphill Uphill

Backing Gas for GTAW, PAW, GMAW or FCAW/G None With/ Without Argon

GMAW Transfer Mode N/A N/A

FCAW/ GTAW Welding Current Type/ Polarity DC/ EN DC/EN

*Remarks: * Total weld length: 7.91"

Guide Bend Test Results

<input type="checkbox"/> Side	<input checked="" type="checkbox"/> Trans. Root (R) & Face (F)	<input type="checkbox"/> Long. Root & Face	Results
-	T-082118-51-R1-Figure QW-462.3 (a)		Acceptable
-	T-082118-51-R2-Figure QW-462.3 (a)		Acceptable
-	T-082118-51-F1-Figure QW-462.3 (a)		Acceptable
-	T-082118-51-F2-Figure QW-462.3 (a)		Acceptable

Radiographic Test Results: NoneVisual Examination Results: Face: Acceptable Root: AcceptableWelding Test Conducted By: Guillermo Castro, LIIIMechanical Tests Conducted By: Acuren Inspection Services Laboratory Test No. PAUT031721-RP

We certify that the statements in this record are correct and that the test coupons were prepared, welded, tested in accordance with the requirements of ASME Section IX/2013

Organization: Petro Industrial Solutions, LLCBy: Adrian Melendez Jr., PM Date: 3/22/2021

CONFIDENTIAL

Exhibit I

VITOL-011999

Adrian Melendez

From: David Smith <dsm@vtti.com>
Sent: Wednesday, July 28, 2021 8:00 AM
To: Adrian Melendez
Cc: Chad Persaud; Merlin Figueira; Terence Keogh; Andreas Constantinou
Subject: RE: Testing requirements

Good morning Adrian,

We have some calls this morning, but will be able to review and respond later today.

Regards,

From: Adrian Melendez <adrian@petroindustrial.us>
Sent: Tuesday, July 27, 2021 10:18 PM
To: David Smith <dsm@vtti.com>
Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>; Andreas Constantinou <aco@vtti.com>
Subject: RE: Testing requirements

Good evening Gent,

Please find our response to your comments below:

- In the place of the ITP and daily records, can you please share the internal welding procedures you applied for GT 17 and GT 20? I assume these procedures are approved by an ASME Authorized Inspection Agency? Petro's welding procedures were created and approved in 2018 by INI Corp out of Puerto Rico under Section IX of the ASME code. INI Corp is an approved ASME/ASNT approved company for WPS and Inspections. Petro has use and have continued to test (through numerous PAUT & X-ray) these same procedures at Limetree Bay, IPOS, Diageo, and Cruzan Rum since 2018.
- Related to the PAUT report, you signed the qualification certificate on behalf of Acuren/Costas. We believe that there must be a report/certificate/document from Acuren/Costas in order for you sign the WPQ. Can you please provide? Please see Mr. Castro's attached letter regarding this question.

Thank you,

Adrian Melendez
Project Manager
(956) 605-4142

From: David Smith <dsm@vtti.com>
Sent: Tuesday, July 27, 2021 8:46 AM
To: Adrian Melendez <adrian@petroindustrial.us>
Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>; Andreas Constantinou <aco@vtti.com>
Subject: RE: Testing requirements

Good morning Adrian,

Two comments from us.



PIS000061

- In the place of the ITP and daily records, can you please share the internal welding procedures you applied for GT 17 and GT 20? I assume these procedures are approved by an ASME Authorized Inspection Agency?
- Related to the PAUT report, you signed the qualification certificate on behalf of Acuren/Costas. We believe that there must be a report/certificate/document from Acuren/Costas in order for you sign the WPQ. Can you please provide?

We are trying to work through this and I believe we all recognize that time is of the essence.

Regards,

David

From: Adrian Melendez <adrian@petroindustrial.us>

Sent: Monday, July 26, 2021 11:30 PM

To: David Smith <dsm@vtti.com>

Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>;

Andreas Constantinou <aco@vtti.com>

Subject: Re: Testing requirements

Good evening, please find our response below along side your questions:

- Full inspection and test plan - no I&TP reports were required from IPOS/Vitol and therefore none can be provided.
- Daily records (for welding, fitting, visual inspection) - we do not have daily reports but have included weld logs with all NDT which includes VT on all welds from a third party inspection company.
- Welding and mechanical tests of WPQs - The actual welders' qualification certificate were given to Petro in lieu of a PAUT report. Each Welder was tested on four different positioned coupons which were phase array inspected and passed. Certification were then approved, accepted and signed by Petro.
-

All welders could be re-qualified under IPOS/VTI supervision via X-ray or PAUT if need be.

Thank you

Adrian Melendez
Project Manager

956-605-4142

On Jul 26, 2021, at 7:23 AM, David Smith <dsm@vtti.com> wrote:

Good morning Adrian,

Here is what Andreas is looking for.

Hello David, in regards to the list of documents missing:

- Full inspection and test plan
- Daily records (for welding, fitting, visual inspection)
- Welding and mechanical tests of WPQs

Please let us know if you have any questions.

Regards,

David

From: David Smith

Sent: Friday, July 23, 2021 10:19 AM

To: Adrian Melendez <adrian@petroindustrial.us>

Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>; Andreas Constantinou <aco@vtti.com>

Subject: RE: Testing requirements

Good morning Adrian,

Andreas has been reviewing the documentation and is looking for some more specific information.

He will be sending me a list and we will make sure you have it.

Regards,

David

From: Adrian Melendez <adrian@petroindustrial.us>

Sent: Thursday, July 22, 2021 4:25 PM

To: David Smith <dsm@vtti.com>

Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>; Andreas Constantinou <aco@vtti.com>

Subject: Re: Testing requirements

Done. Thanks David

Adrian Melendez

Project Manager

956-605-4142

On Jul 22, 2021, at 4:23 PM, David Smith <dsm@vtti.com> wrote:

Hi Adrian,

Can you add me? I never got it either.

Regards,

From: Adrian Melendez <adrian@petroindustrial.us>

Sent: Thursday, July 22, 2021 4:23 PM

To: David Smith <dsm@vtti.com>

Cc: Chad Persaud <chad@petroindustrial.us>; Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>; Andreas Constantinou <aco@vtti.com>

Subject: Re: Testing requirements

Hi David,

I just shared the 3" vent folder on Dropbox with Andreas. Andreas, most of what your asking for is in the folder. Please let me know if anything else is needed.

Thank you,

Adrian Melendez
Project Manager

956-605-4142

On Jul 22, 2021, at 4:13 PM, David Smith <dsm@vtti.com> wrote:

Adrian,

Sorry, I should have been clearer.

Andreas is our Global Technical Director. He had helped with this. If some of it is in the dropbox you provided to Vitol last week, can you please add Andreas and I? This is what he is looking for. I added him, so you can ask any questions.

Regards,
David

- Approved Welding Procedures (stamped by third party would be my recommendation – Notified Body in Europe – where ASME is followed the equivalent is Authorised Inspection Agency I think)
 - Welding procedures to be representative of the work that would be carried out
- Submit Quality control documentation that they plan to follow during the project
 - Inspection and Test Plan (ITP)
 - Material certificates and traceability records
 - Daily records (for welding, fitting, visual inspection, pressure test etc)
 - Welding maps and welding monitoring and finished welding records
 - Any internal inspections carried out (separate to the third party ones) – see previous to last bullet point below
 - Record and Certificates for consumables (gases, electrodes etc)

- o Documentation of Welding procedures utilised in the project and valid welder certificates for anyone on the site
- o NDT reports received from third party
- o Pressure testing report

With regards to the completed project, I would expect to see the items listed in the above second bullet point. Basically, you should be able to trace all the details of a particular weld

- 1) What parent material was used
- 2) Which procedure was followed for the welding and what consumables were used
- 3) Who welded it and when
- 4) Who checked the fitting and who checked the weld visually
- 5) If it was NDT, by which method, when and what was the result (records)
- 6) If it was pressure tested and when (records)

From: Adrian Melendez <adrian@petroindustrial.us>

Sent: Thursday, July 22, 2021 2:43 PM

To: David Smith <dsm@vtti.com>; Chad Persaud <chad@petroindustrial.us>

Cc: Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>

Subject: RE: Testing requirements

Hi David,

I have attached the welders' quals for your review. Let me know what else I can provide and when we can meet with the inspector Guillermo for clarification.

Thank you,

Adrian Melendez
Project Manager
(956) 605-4142

From: David Smith <dsm@vtti.com>

Sent: Thursday, July 22, 2021 12:17 PM

To: Chad Persaud <chad@petroindustrial.us>; Adrian Melendez <adrian@petroindustrial.us>

Cc: Merlin Figueira <mef@vtti.com>; Terence Keogh <tek@vtti.com>

Subject: Testing requirements

Chad and Adrian,

Before we speak to Guillermo, we would like to have all of the testing records.

If you can please provide them, we will review and then be prepared to speak to Guillermo.

If you have any questions please let us know.

Regards,

David

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July 29, 2021

To: Petro Industrial

My name is Guillermo Castro and I am an independent contractor with my own business that approves and test welds for different independent clients.

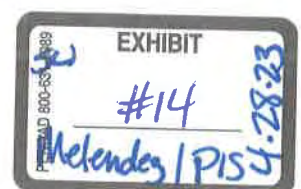
Recently I worked in Puerto Rico from January to May 2021 for an independent client. Adrian Melendez from Petro Industrial contact me to test & qualify a few welders that I personally qualified three years ago at Limetree Bay. I tested six welders for Adrian, at my Client's shop in Puerto Rico, but unfortunately did not have the original Quals under Acuren saved and to re-certify the previous reports I had to adjust the old welders' quals and changed the welders' tensile number, the qualification date, and the four test coupons. I gave Petro Industrial a welder's qualification certificate for each welder, which all welders passed, in lieu of a PAUT report. No qualification reports were created due to each welder was just testing to re-qualify. Should you need me to come to St. Croix to recertify the welders I'm willing to do so.

On another note, I will be leaving on a project overseas and will have very limited internet access. Please use this letter as my communication on this matter.

Regards,

Guillermo Castro

gcastrod0@gmail.com



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Exhibit I

IPOS 000553



July 28, 2021

VIA ELECTRONIC MAIL
AND US MAIL

Petro Industrial Solutions LLC
c/o Adrian Melendez, President
P.O. Box 26303
Christiansted, St. Croix
U.S. Virgin Islands 00824

Re: Maintenance Contract dated September 1, 2019

Dear Mr. Melendez,

Pursuant to paragraph 6 of the above-noted contract, this will serve to provide notice of termination of the contract between Island Project and Operating Services LLC ("IPOS") and Petro Industrial Solutions LLC.

Sincerely,

A handwritten signature in black ink, appearing to read "DSM".

David Smith
General Manager

IPOS LLC
P.O. Box 303388
St. Thomas, VI 008 03
US Virgin Islands
W: www.vtti.com



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IPOS 005359